

### REMARKS

Claims 1-29 were pending as of the action mailed on April 15, 2008. Claims 1, 16, and 26 are in independent form. Claims 1 and 26 are being amended for clarity. Claim 30 is added. No new matter has been added. Support for the amendments can be found in the specification, for example, on page 15, lines 7-17. Support for new claim 30 can be found in the specification at least at page 15, lines 20-24. Reconsideration of the action is respectfully requested in light of the foregoing amendments and the following remarks.

The examiner rejected claims 1-2, and 5-6 under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 4,924,408 ("Highland"). The examiner rejected claims 3-4 under 35 U.S.C. § 103(a) as allegedly unpatentable over Highland in view of Luke, "A Rule-Based Specification System for Computational Fluid Dynamics ("Luke"). The examiner rejected claims 16-25 under 35 U.S.C. § 103(a) as allegedly unpatentable over U.S. Patent No. 5,423,041 ("Burke") in view of U.S. Patent Application Publication No. 2005/0043965 ("Heller"). The examiner rejected claims 26-28 under 35 U.S.C. § 103(a) as allegedly unpatentable over Highland. The examiner rejected claims 7-15 and 29 under 35 U.S.C. § 103(a) as allegedly unpatentable over Highland and Burke.

### **Section 102 Rejections**

Claim 1. Claim 1 recites a method that includes receiving a rule set as a single package in a processing system. A dependency graph is generated for the rule set. The dependency graph includes a plurality of ranked nodes. The nodes include entity nodes, attribute nodes, condition nodes, and rule nodes. A first attribute node points to a first condition node when a first attribute is used in a conditional expression, a first condition node points to a first rule node when a first condition associated with the first condition node is used in a first rule associated with the first rule node, and where the first rule node points to a second rule node when the first rule overrides a second rule associated with the second rule node.

The examiner states that Highland discloses the claimed dependency graph at FIGS. 2a-2b and col. 5, lines 50-55. The applicant respectfully disagrees.

Highland discloses a method of converting a knowledge base and an inference engine into program source code. *See* col. 1, lines 18-23. The cited portions of Highland disclose translating rules of the knowledge base into a rule tree network.

Specifically, col. 5, lines 50-55 simply provide the brief description of the drawings for FIG. 2, which reads as follows:

FIG. 2 (comprised of FIG. 2a, FIG. 2b and FIG. 2c) illustrates how rules of a knowledge base (FIG. 2a) can be translated into a rule tree network (FIG. 2b), and how this rule tree network can be converted into compilable, procedural, program code according to the present invention (FIG. 2c).

FIG. 2a shows a rule of a knowledge base, specifically, "If  $A > 10$  and  $B < 0$  then display A". FIG. 2b shows a rule tree representing the rule of FIG. 2a. Finally, FIG. 2c, shows the generated code corresponding to the rule. *See* FIGS. 2a-2c; col. 5, lines 63-28. The rule tree represents one or more logically partitioned rules. *See* col. 6, lines 28-31. Thus, each node in the rule tree corresponds to a component of that rule. The rule tree is traversed beginning with the root node and labeled with a sequential index value, uniquely identifying each node in the rule tree. *See* col. 6, lines 37-42. A procedure is generated for the rule whereby the rule is evaluated according to the index values. *See* col. 6, lines 44-52.

In the examiner's response to the applicant's previous arguments, the examiner states that claim 1 "merely claims four different types of nodes in a dependent graph without further defining what those nodes are and what the difference between those nodes except [that] they are named differently. Therefore, as Highland discloses in Fig. 1b, "Internal Rule Tree", the rule tree also has 4 different types of nodes." Office Action pages 2-3. The applicant notes that the examiner references FIG. 1b, which is not used in the § 102 rejection of claim 1. However, both FIGS. 1b and 2b show similar "internal rule trees". The applicant is assuming that the examiner means the rule trees as shown in either FIGS. 1b and 2b.

The applicant disagrees with the examiner's interpretation of the claimed nodes, which should be interpreted in light of the specification and not simply as generic nodes having different names such that the examiner can map them to any other node. However, for clarity and in order to expedite prosecution, the applicant has amended claim 1. Claim 1, as amended,

requires that a first attribute node point to a first condition node when a first attribute is used in a conditional expression, that a first condition node points to a first rule node when a first condition associated with the first condition node is used in a first rule associated with the first rule node, and that the first rule node points to a second rule node when the first rule overrides a second rule associated with the second rule node. The cited portions of Highland do not disclose or suggest such relationships between the nodes of a dependency graph for a rule set, as required by claim 1.

The applicant respectfully submits that claim 1, as well as claims 2-15, which depend from claim 1, are in condition for allowance.

### **Section 103 Rejections**

Claim 16 stands rejected over Burke and Heller. Claim 16 recites a method for automating business processes. The method includes receiving a rule set as a single package in a computer system. Logical conflicts within the rule set are determined. A logical conflict exists when two or more rules receiving the same inputs result in contradictory actions. The logical conflicts are resolved and a sequence of processing logic from the rule set is generated for optimal processing of inputted facts.

The examiner states that Burke does not disclose determining logical conflicts with a rule set where a logical conflict exists when two or more rules receiving the same inputs result in contradictory actions. However, the examiner states that Heller discloses the claimed logical conflicts at paragraph [0020]. The applicant respectfully disagrees.

Heller discloses a tool for developing treatment plans for individuals having diagnosed medical conditions. *See* Abstract. A set of national guidelines or studies are used to derive a set of rules capable of distinguishing different classes of treatment indications and goals. *See* paragraphs [0045], [0049]; FIG. 1. Any identified rule conflicts are resolved to create a customized set of treatment plan creation rules with associated protocols that can be published for use by clinics. *See* paragraphs [0059], [0062].

The cited portion of Heller merely states that conflicts are identified for the treatment plan rules and resolved. However, this conflict resolution does not disclose or suggest the

claimed determining of logical conflicts. In particular, claim 16 requires logical conflicts to exist when two or more rules receiving the same inputs result in contradictory actions. Thus, the existence of a logical conflict between two rules depends on the particular inputs to the rules. Two rules may logically conflict based on some inputs but not others. Based on the resolution of the logical conflicts, the inputs are processed using the resolved logical conflicts.

The conflict identification and resolution disclosed in Heller, by contrast, does not address conflicts based on particular inputs to two rules resulting in contradictory actions, but instead addresses conflicts during rule generation. Moreover, the inputs (patient health data) are not received until after Heller's conflict resolution is complete and the rule package published to a particular user (e.g., a particular clinic). *See e.g.*, paragraphs [0059], [0062], [0064], and [0065]; FIG. 1 (patient data 116 received after conflicts resolved). Therefore, Heller does not disclose or suggest a logical conflict existing when two or more rules receiving the same inputs result in contradictory actions. Thus, Heller does not disclose the logical conflicts of claim 16.

The applicant respectfully submits that claim 16, as well as claims 17-25, which depend from claim 16, are in condition for allowance.

Claim 26 stands rejected as unpatentable over Highland. Claim 26 recites a computer program product that includes limitations corresponding to those of claim 1. The examiner rejects claim 26 using the same cited portions of Highland as claim 1. For the reasons set forth above with respect to claim 1, claim 26 as well as claims 27-29, which depend from claim 26, are in condition for allowance.

### **New Claim**

Claim 30 is added. Claim 30 depends from claim 1 and recites a node rank used to determine an order of processing of the nodes, the nodes being ranked such that a child node has a greater value than each of its parent nodes, and where independent nodes are ranked such that a more computationally intensive node is ranked higher. The cited references do not disclose or suggest the node ranking of claim 30. The applicant respectfully submits that claim 30 is allowable for at least this reason in addition to the reasons set forth above with respect to claim 1.

### **Conclusion**

For the foregoing reasons, the applicant submits that all the claims are in condition for allowance.

By responding in the foregoing remarks only to particular positions taken by the examiner, the applicant does not acquiesce with other positions that have not been explicitly addressed. In addition, the applicant's selecting some particular arguments for the patentability of a claim should not be understood as implying that no other reasons for the patentability of that claim exist. Finally, the applicant's decision to amend or cancel any claim should not be understood as implying that the applicant agrees with any positions taken by the examiner with respect to that claim or other claims.

The one-month (1) extension fee and additional claim fee are being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other credits or charges to Deposit Account No. 06-1050.

Respectfully submitted,

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/Brian J. Gustafson/

Brian J. Gustafson  
Reg. No. 52,978

Customer No. 26181  
Fish & Richardson P.C.  
Telephone: (650) 839-5070  
Facsimile: (650) 839-5071